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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application;

Claim 1. (Currently Amended) ~~Device~~ A device for processing an image signal ~~that produces and producing~~ a second image signal to display ~~the~~ an image with an expansion rate of the image being changed consecutively, based on a first image signal constituted of ~~plural~~ a plurality of items of pixel data, the device comprising:

phase information generation means for generating phase information of a target position in the second image signal that corresponds to each of the changed expansion rates;

pixel data production means for producing pixel data of the target position in the second image signal, in accordance with the phase information generated by the phase information generation means; and

image quality adjustment means for adjusting a quality of the image due to the second image signal by using image quality adjustment information generated based on ~~the basis of~~ information related to at least the expansion rate of the image.

Claim 2. (Original) The device for processing an image

signal according to claim 1, wherein the quality of the image is a resolution.

Claim 3. (Original) The device for processing an image signal according to claim 1, wherein the quality of the image is a noise suppression degree.

Claim 4. (Original) The device for processing an image signal according to claim 1, wherein the information related to the expansion rate of the image is a change rate of the expansion rate.

Claim 5. (Original) The device for processing an image signal according to claim 1, wherein the information related to the expansion rate of the image is the expansion rate of the image.

Claim 6. (Currently Amended) The device for processing an image signal according to claim 1, wherein the image quality adjustment means further adjusts a quality of an image due to pixel data of the target position in the second image signal by using the image quality adjustment information generated based on the basis of characteristics information extracted from plural the plurality of items of pixel data of the first image signal located in a periphery of the target position in the

second image signal.

Claim 7. (Currently Amended) The device for processing an image signal according to claim 1, wherein the characteristics information is a dynamic range ~~which~~ that is a difference between a maximum value and a minimum value among the ~~plural~~ plurality of items of pixel data of the first image signal.

Claim 8. (Currently Amended) The device for processing an image signal according to claim 1, wherein the characteristics information is movement information obtained by using a difference between items of the pixel data separated in a time direction from each other among the ~~plural~~ plurality of items of the pixel data of the first image signal.

Claim 9. (Currently Amended) The device for processing an image signal according to claim 1, wherein the characteristics information is space waveform information ~~which~~ that indicates a level distribution of the ~~plural~~ plurality of items of the pixel data of the first image signal.

Claim 10. (Currently Amended) The device for processing an image signal according to claim 1, wherein the pixel data

generation means comprises:

coefficient data generation means for generating coefficient data corresponding to phase information generated by the phase information generation means, said coefficient data being used in an estimate equation;

~~first~~ data selection means for selecting the ~~plural~~ plurality of items of pixel data located in a periphery of the target position of the second image signal, based on the first image signal; and

calculation means for obtaining, by calculation, pixel data of the target position in the second image signal based on the estimate equation by using the coefficient data generated by the coefficient data generation means and the ~~plural~~ plurality of items of pixel data selected by the ~~first~~ data selection means.

Claim 11. (Currently Amended) The device for processing an image signal according to claim 10, wherein the data selection means comprises first data selection means and further comprising:

second data selection means for selecting plural items of pixel data located in a periphery of the target position of the second image signal, based on said first image signal; and

class detection means for detecting a class to which the pixel data of the target position in the second image signal belongs, based on the ~~plural~~ plurality of items of pixel data

selected by the second data selection means,

wherein the coefficient data generation means further generates coefficient data corresponding to the class detected by the class detection means, said coefficient data being used in the estimate equation.

Claim 12. (Original) The device for processing an image signal according to claim 10, wherein the coefficient data generation means comprises:

storage means for storing coefficient seed data, which is coefficient data in a production equation containing the phase information as a parameter, said production equation being used to produce the coefficient data, used in the estimate equation; and

coefficient data production means for producing the coefficient data used in the estimate equation based on the production equation, by using the coefficient seed data stored in the storage means and the phase information generated by the phase information generation means.

Claim 13. (Original) The device for processing an image signal according to claim 12, wherein the production equation contains the image quality adjustment information as a parameter; and

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wherein the coefficient data production means further, produces coefficient data used in the estimate equation based on the production equation, by using the image quality adjustment information.

Claim 14. (Original) The device for processing an image signal according to claim 10, wherein the coefficient data generation means comprises:

storage means for storing coefficient data used in the estimate equation for each of the pieces of phase information that may be generated by the phase information generation means; and

coefficient-data-reading means for reading coefficient data that corresponds to the phase information generated by the phase information generation means, from the storage means.

Claim 15. (Original) The device for processing an image signal according to claim 14,

wherein the storage means further stores coefficient data used in the estimate equation for each combination of the phase information that may be generated by the phase information generation means and the image quality adjustment information that may be generated by the image quality adjustment means; and.

wherein the coefficient-data-reading means reads

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coefficient data corresponding to the phase information generated by the phase information generation means and the image quality adjustment information generated by the image quality adjustment means, from the storage-means.

Claim 16. (Currently Amended) A method for processing an image signal ~~that produces~~ and producing a second image signal to display ~~the~~ an image with an expansion rate of the image being changed consecutively, based on a first image signal constituted of ~~plural~~ a plurality of items of pixel data, the method comprising the steps of:

generating phase information of a target position in the second image signal, said phase information corresponding to each of the changed expansion rates;

producing pixel data of the target position in the second image signal, in accordance with the phase information generated by the phase information generation means;, and

adjusting a quality of the image due to the second image signal by using image quality adjustment information generated based on ~~the basis of~~ information related to at least the expansion rate of the image.

Claim 17. (Currently Amended) A computer-readable medium for recording a program that causes a computer to perform a method for processing an image signal ~~that produces~~ and

producing a second image signal to display ~~the~~ an image with an expansion rate of the image being changed consecutively, based on a first image signal constituted of ~~plural~~ plurality of items of pixel data, the method comprising the steps of:

generating phase information of a target position in the second image signal, said phase information corresponding to each of the changed expansion rates;

producing pixel data of the target position in the second image signal, in accordance with the phase information generated by the phase information generation means; and

adjusting a quality of the image due to the second image signal by using image quality adjustment information generated based on ~~the basis of~~ information related to at least the expansion rate of the image.

Claim 18. (Currently Amended) A program for causing a computer to perform a method for processing an image signal ~~that produces~~ and producing a second image signal to display ~~the~~ an image with an expansion rate of the image being changed consecutively, based on a first image signal constituted of ~~plural~~ plurality of items of pixel data, the method comprising the steps of:

generating phase information of a target position in the second image signal, said phase information corresponding to each of the changed expansion rates;



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producing pixel data of the target position in the second  
image signal, in accordance with the phase information generated  
by the phase information-generation means; and

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signal by using image quality adjustment information generated  
based on ~~the basis of~~ information related to at least the  
expansion rate of the image.